

THE CLAIMS

The text of all pending claims, including withdrawn claims, is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

1. (PREVIOUSLY PRESENTED) A method to write servo information on a disc in a disc drive, the method comprising:

centering on a cylinder of the disc having skew '0', sequentially writing servo information toward the cylinder having skew '0' from an outer surface in an outer region, and sequentially writing the servo information toward the cylinder having skew '0' from an inner surface in an inner region;

after the writing the servo information is completed, inspecting the servo information written in a cylinder at a predetermined distance from the cylinder having skew '0', and determining whether the servo information is correctly written; and

if errors occur in the cylinder at the predetermined distance from the cylinder having skew '0', determining that all of the servo information is not correctly written, and writing the servo information again.

2. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, further comprising:

if the errors do not occur in the cylinder at the predetermined distance from the cylinder having skew '0', track-defect-processing all tracks within the predetermined distance from the cylinder having skew '0', such that a normal search operation cannot be performed.

3. (ORIGINAL) The method as claimed in claim 2, wherein the cylinder having skew '0' is placed at an interface with a data zone, and the track-defect-processed cylinders within the predetermined distance from the cylinder having skew '0' are dispersed in two data zones.

4. (PREVIOUSLY PRESENTED) A method to write servo information on a disc in a disc drive, the method comprising:

sequentially writing servo information from a cylinder of the disc having a least number to a cylinder having skew '0';

after writing the servo information to the cylinder having skew '0', moving a head to a cylinder having the largest number;

sequentially writing the servo information from the cylinder having a largest number to a cylinder prior to the cylinder having skew '0';

after writing all the servo information, inspecting the servo information written in a cylinder at a predetermined distance from the cylinder having skew '0', and determining whether the servo information is correctly written; and

if errors occur in the cylinder at the predetermined distance from the cylinder having skew '0', determining that all of the servo information is not correctly written, and writing the servo information again.

5. (PREVIOUSLY PRESENTED) The method as claimed in claim 4, further comprising:

if errors do not occur in the cylinder at the predetermined distance from the cylinder having skew '0', track-defect-processing all tracks within the predetermined distance from the cylinder having skew '0', such that a normal search operation cannot be performed.

6. (ORIGINAL) The method as claimed in claim 5, further comprising:
placing the cylinder having skew '0' at an interface with a data zone, so that the track-defect-processed cylinders within the predetermined distance from the cylinder having skew '0' are dispersed in two data zones.

7. (PREVIOUSLY PRESENTED) A method to write and inspect servo information on a disc in a disc drive, the method comprising:

writing servo information on a cylinder of the disc;

inspecting the servo information written in the cylinder;

if an error occurs in the cylinder, determining whether the number of the cylinder in which the error occurs corresponds to a cylinder at a predetermined distance from a cylinder having skew '0';

if the number of the cylinder in which the error occurs corresponds to the cylinder at the predetermined distance from the cylinder having skew '0', determining that all of the servo information is not correctly written and writing the servo information again, and if not, track-defect-processing the cylinder in which the error occurs; and

if all cylinders have been inspected, track-defect-processing all tracks within the

predetermined distance from the cylinder having skew '0', such that a normal search operation cannot be performed.

8. (ORIGINAL) The method as claimed in claim 7, wherein the writing of the servo information comprises:

centering on the cylinder having skew '0', sequentially writing servo information toward the cylinder having skew '0' from an outer surface in an outer region of the disc; and

sequentially writing the servo information toward the cylinder having skew '0' from an inner surface in an inner region of the disc.

9. (ORIGINAL) The method as claimed in claim 7, wherein the writing of the servo information comprises:

sequentially writing the servo information from a cylinder having a least number to the cylinder having skew '0';

after writing the servo information to the cylinder having skew '0', moving a head to a cylinder having a largest number; and

sequentially writing the servo information from the cylinder having the largest number to a cylinder prior to the cylinder having skew '0'.

10. (ORIGINAL) The method as claimed in claim 7, further comprising:

placing the cylinder having skew '0' at an interface with a data zone, so that the track-defect-processed cylinders within the predetermined distance from the cylinder having skew '0' are dispersed in two data zones.

11. (PREVIOUSLY PRESENTED) A disc drive comprising:

a disc having a surface;

a spindle motor that rotates the disc;

a transducer that writes and reads information in and from the disc;

a voice coil motor that moves the transducer;

a controller that controls the transducer to

sequentially write servo information toward a cylinder of the disc having skew '0' from an outer portion of the surface in an outer region of the disc,

sequentially write servo information toward the cylinder having skew '0' from an inner portion of the surface in an inner region of the disc, and

after the writing of the servo information is completed, to inspect the servo information written in a cylinder at a predetermined distance from the cylinder having skew '0' and determining whether the servo information is correctly written; and

a software and a hardware unit that allows the controller to perform

after writing servo information on a cylinder and moving the transducer to a cylinder having a smallest number, a first operation of inspecting the servo information written in the cylinder,

if an error occurs, a second operation of determining whether the number of the cylinder in which the error occurs corresponds to a cylinder at a predetermined distance from the cylinder having skew '0',

if the number of the cylinder in which the errors occur corresponds to the cylinder at the predetermined distance from the cylinder having skew '0', a third operation of determining that all of the servo information is not correctly written and writing the servo information again, and if not, track-defect-processing the cylinder in which the error occurs and moving the transducer to a next cylinder, and repeating the first, second, and third operations, and

if the cylinder in which the servo information in the first operation is inspected corresponds to a cylinder having a largest number, a fourth operation of track-defect-processing all tracks within a predetermined distance from the cylinder having skew '0', such that a normal search operation cannot be performed.

12. (CANCELLED)

13. (PREVIOUSLY PRESENTED) The disc drive as claimed in claim 11, wherein:
the cylinder having skew '0' is placed at an interface with a data zone, so that the track-defect-processed cylinders within the predetermined distance from the cylinder having skew '0', are dispersed in two data zones.

14. (CANCELLED)

15. (CANCELLED)

16. (PREVIOUSLY PRESENTED) A method to write servo information on a disc drive including a writing head and a disc with tracks, the method comprising:
defining a skew zero track as the track in which a skew between a tangent to the skew

zero track and an axis of the writing head is approximately zero;

writing servo information on sequential tracks in a first radial direction of the disc toward the skew zero track, until servo information is written on the skew zero track;

writing servo information on sequential tracks in a second radial direction of the disc, opposite the first direction, toward the skew zero track, until servo information is written on a track immediately preceding the skew zero track; and

inspecting the servo information to determine if a predetermined tolerance of the writing of the servo information was exceeded, including

inspecting the servo information on each track,

if an abnormality in the servo information is determined on a given track, determining whether the given track is located at a predetermined distance from the skew zero track;

if the given track is not located at the predetermined distance from the skew zero track, track-defect-processing the given track,

if the given track is located at the predetermined distance from the skew zero track, rewriting all of the servo information, and inspecting the servo information again, and

once all tracks are inspected and no abnormality is found on the track at the predetermined distance from the skew zero track, track-defect-processing all tracks within the predetermined distance from the skew zero track, such that a normal search operation cannot be performed.

17. (CANCELLED)

18. (CANCELLED)

19. (CANCELLED)

20. (PREVIOUSLY PRESENTED) The method according to claim 16, further comprising:

defining an interface of two data zones at the skew zero track, thus distributing the track-defect processed tracks within the predetermined distance from the skew zero track in the two data zones.

21. (PREVIOUSLY PRESENTED) A method to write servo information on a disc

drive including a writing head and a disc with tracks, the method comprising:

- defining a skew zero track as the track in which a skew between a tangent to the skew zero track and an axis of the writing head is approximately zero;

- writing servo information on sequential tracks in a first radial direction of the disc toward the skew zero track, until servo information is written on the skew zero track;

- writing servo information on sequential tracks in a second radial direction of the disc, opposite the first direction, toward the skew zero track, until servo information is written on a track immediately preceding the skew zero track; and

- inspecting the servo information to determine if a predetermined tolerance of the writing of the servo information was exceeded, including

 - inspecting the servo information on a given track located at a predetermined distance from the skew zero track,

 - if an abnormality in the servo information is determined on the given track, rewriting all of the servo information, and inspecting the servo information on the given track again,

 - repeating the inspecting and rewriting until one of no abnormality is found in the given track, or the servo information has been written a predetermined number of times, and

 - if no abnormality is found on the given track, track-defect-processing all tracks within the predetermined distance from the skew zero track, such that a normal search operation cannot be performed.

22. (ORIGINAL) The method according to claim 21, further comprising:

- defining an interface of two data zones at the skew zero track, thus distributing the track-defect-processed tracks within the predetermined distance from the skew zero track in the two data zones.

23. (PREVIOUSLY PRESENTED) A disc drive, comprising:

- a reading and writing head;

- a disc; and

- a controller, controlling the reading and writing head to

 - write servo information on sequential tracks in a first radial direction of the disc toward a skew zero track until servo information is written on the skew zero track;

write servo information on sequential tracks in a second radial direction of the disc, opposite the first direction, toward the skew zero track, until servo information is written on a track immediately preceding the skew zero track, and

inspect the servo information to determine if the predetermined tolerance of the writing of the servo information was exceeded,

wherein the skew zero track is defined as the track in which a skew between a tangent to the skew zero track and an axis of the reading and writing head is approximately zero, and

wherein controlling the reading and writing head to inspect the servo information to determine if the predetermined tolerance of the writing of the servo information was exceeded includes

controlling the reading and writing head to

inspect the servo information on each track;

if an abnormality in the servo information is determined on a given track, determine whether the given track is located at a predetermined distance from the skew zero track;

if the given track is not located at the predetermined distance from the skew zero track, track-defect-process the given track;

if the given track is located at the predetermined distance from the skew zero track, rewrite all of the servo information, and inspect the servo information again, and

once all tracks are inspected, track-defect-process all tracks within the predetermined distance from the skew zero track, such that a normal search operation cannot be performed.

24. (CANCELLED)

25. (PREVIOUSLY PRESENTED) The disc drive according to claim 23, wherein an interface of two data zones is defined at the skew zero track, thus distributing the track-defect-processed tracks within the predetermined distance from the skew zero track in the two data zones.

26. (PREVIOUSLY PRESENTED) A computer readable medium, comprising;
a first set of instructions to define a skew zero track as a track of a disc in which a skew between a tangent to the skew zero track and an axis of a writing head is approximately zero;
a second set of instructions to write servo information on sequential tracks in a first radial

direction of the disc toward the skew zero track until servo information is written on the skew zero track;

a third set of instructions to write servo information on sequential tracks in a second radial direction of the disc, opposite the first direction, toward the skew zero track, until servo information is written on a track immediately preceding the skew zero track

a fourth set of instructions to inspect the servo information to determine if the predetermined tolerance of the writing of the servo information was exceeded,

wherein the fourth set of instructions includes

a fifth set of instructions to inspect servo information on each track;

a sixth set of instructions, that, if an abnormality in the servo information is determined on a given track, determines whether the given track is located at a predetermined distance from the skew zero track;

a seventh set of instructions, that, if the given track is not located at the predetermined distance from the skew zero track, track-defect-processes the given track;

an eighth set of instructions, that, if the given track is located at the predetermined distance from the skew zero track, rewrites all of the servo information, and inspects the servo information again; and

a ninth set of instructions, that once all tracks are inspected, track-defect-processes all tracks within the predetermined distance from the skew zero track, such that a normal search operation cannot be performed.

27. (CANCELLED)

28. (PREVIOUSLY PRESENTED) The computer readable medium according to claim 26, further comprising:

a tenth set of instructions to define an interface of two data zones at the skew zero track, thus distributing the track-defect-processed tracks within the predetermined distance from the skew zero track in the two data zones.

29. (CANCELLED)

30. (CANCELLED)